



# Wireless network data traffic: worldwide trends and forecasts 2021–2026



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## About this report

This report presents 5-year forecasts of wireless data traffic worldwide, in eight regions and in selected countries. It analyses the key trends in, and drivers and inhibitors of, data traffic. The forecast dataset underpinning this report covers:

- **mobile data:** total data delivered over cellular networks, plus how much of this data is delivered to handsets (split by generation) and to fixed-wireless access (FWA) terminals
- **Wi-Fi data:** data delivered over public and private Wi-Fi connections (at home or at work), plus how much of this data is delivered to handsets.

### KEY QUESTIONS ANSWERED IN THIS REPORT

- To what extent will cellular data traffic continue to grow in developed and emerging markets between 2021 and 2026?
- What are the historical trends up until 2020, and how has the COVID-19 pandemic affected data usage?
- What are the key factors that explain the significant variations in average cellular data usage in different markets?
- How much will FWA affect cellular data traffic growth in the future?
- What will be the impact of 5G on cellular data traffic trends?
- What will be the continuing role of Wi-Fi as cellular data traffic continues to grow?

### GEOGRAPHICAL COVERAGE

- Central and Eastern Europe (CEE)
- Developed Asia-Pacific (DVAP)
- Emerging Asia-Pacific (EMAP)
- Latin America (LATAM)
- Middle East and North Africa (MENA)
- North America (NA)
- Sub-Saharan Africa (SSA)
- Western Europe (WE)

### KEY METRICS

#### Mobile data

Total volume and average usage for handsets (by generation (3G, 4G, 5G)) and FWA.

#### Wi-Fi data

Total volume and average usage for handsets, split by public and private networks.

### WHO SHOULD READ THIS REPORT

- Executives in strategy departments of mobile and fixed operators that want to understand the future dynamics in wireless network traffic, as well as the future enablers of, and barriers to, growth.
- Executives in strategy departments of network equipment vendors that need to understand how quickly wireless traffic will grow across different markets and thus where the demand for their products may be the greatest.

## Mobile data traffic grew more slowly than fixed traffic in half of the world in 2020

In countries where a high proportion of the population depends solely on mobile networks for internet connectivity, mobile data traffic growth in 2020 was somewhat higher than would have been expected prior to the pandemic. Elsewhere, the decline in the growth rate was steeper than might otherwise have been expected (some decline was to be expected).

The mobile slowdown was particularly marked in the USA; some operators reported flat overall traffic (when they might have expected some growth), and one reported a decline. There was also a shift from app to web versions of popular services such as Facebook and YouTube in 2020 (which suggests a shift from mobile devices to PCs),<sup>1</sup> as well as direct evidence of a shift away from mobile devices.<sup>2</sup>

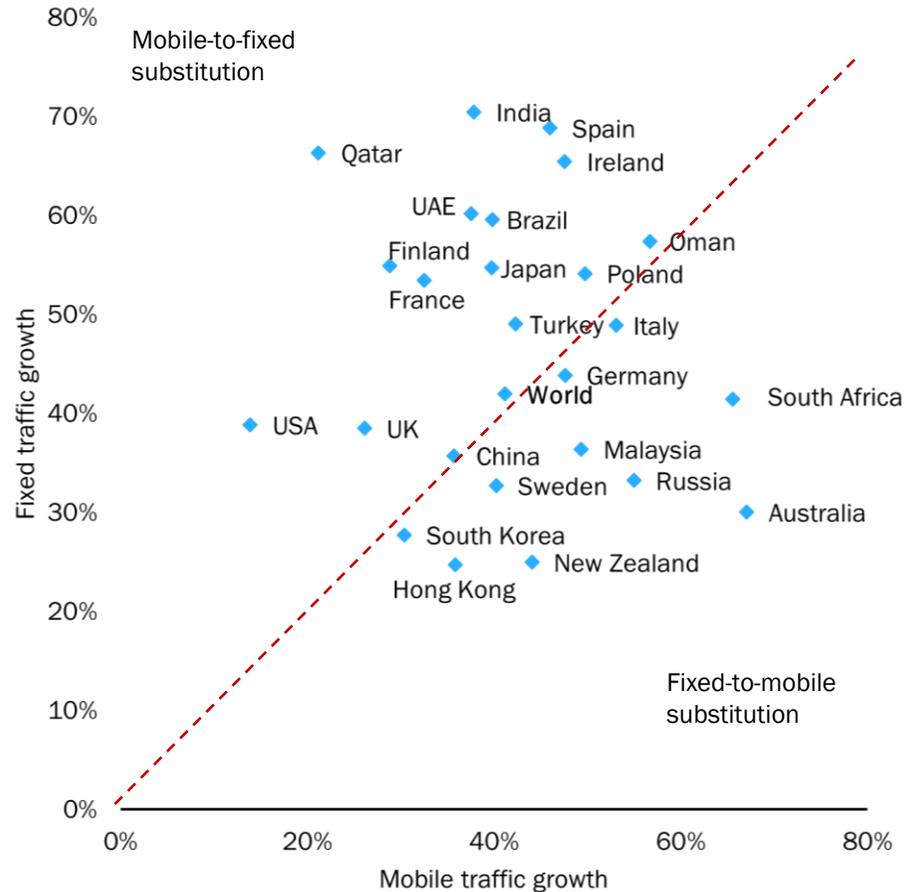
Growth in FWA traffic was stronger than that for handsets in some markets. This is partly because of the shift to fixed broadband created by the pandemic, but also because of the wider availability of 5G networks.

We expect that these trends will return to their previous trajectories in late 2021/2022 (depending on the public health situation), but we also anticipate that fixed and mobile traffic growth rates will converge in the long term. Small changes in fixed broadband household penetration make a substantial difference to the number of mobile-only households, which in turn affects mobile traffic growth. Few households will revert to being mobile-only.

<sup>1</sup> SimilarWeb (2020), *SimilarWeb Coronavirus Data & Insights Hub*. Available at <https://www.similarweb.com/coronavirus/>.

<sup>2</sup> ARCEP, *Baromètre du Numérique Edition 2021*, pp10–11. Available at [https://www.arcep.fr/uploads/tx\\_gspublication/rapport-barometre-numerique-edition-2021.pdf](https://www.arcep.fr/uploads/tx_gspublication/rapport-barometre-numerique-edition-2021.pdf).

**Figure 4: Fixed and mobile network traffic growth rates, by country, worldwide, 2020**



Source: Analysys Mason

## Wi-Fi continues to account for the largest part of wireless network data traffic

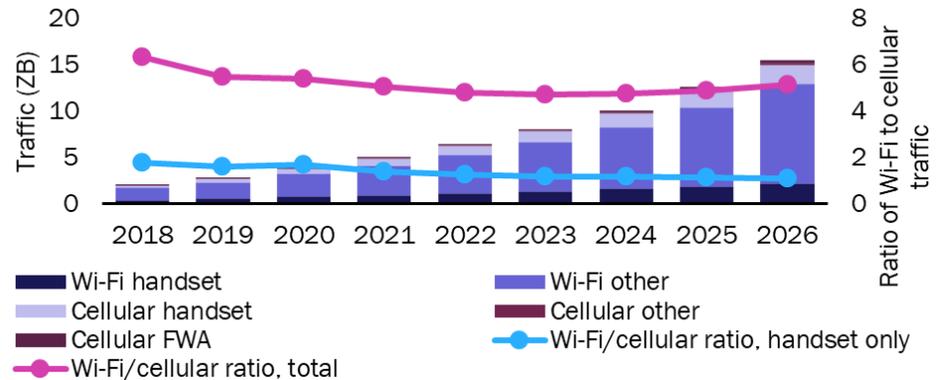
Wi-Fi networks accounted for 5.4 times more traffic than mobile networks in 2020. They accounted for 62% of traffic on handsets and 49 times more traffic than cellular networks on other devices. Cellular FWA is a special case because it invariably relies on Wi-Fi networks for indoor coverage. When establishing ratios, cellular FWA traffic is included in both cellular and Wi-Fi traffic.

The chances of replacing Wi-Fi with 5G in enterprise settings seem remote, particularly in the typical ‘carpeted office’ environment, though there may be an opportunity in more-specialised industrial settings. The fundamental open-ness and low cost of Wi-Fi remains attractive and offers a major disincentive to migrate.

Historically, the Wi-Fi share of handset traffic has been falling, driven by lower data tariffs that make consumers less incentivised to switch over to Wi-Fi at home. This trend was reversed in 2020 because of the COVID-19 crisis, though we expect it to return as we exit the pandemic. However, the downward trend will flatten out worldwide as fixed broadband penetration in emerging markets increases.

Some integrated operators are keen to manage Wi-Fi-to-mobile substitution by using converged core/ATSSS, thereby preserving licensed radio resources by directing the flow of traffic to Wi-Fi. Consumers’ substitution of Wi-Fi by mobile indoors is extremely limited beyond handsets. Only a small minority of tablets are connected to mobile networks and most other devices rely on tethering to a handset if mobile connectivity is required.

**Figure 11: Wi-Fi and cellular traffic, by access type, worldwide, 2018–2026**



Source: Analysys Mason

Wi-Fi6 offers a better quality of service than its predecessors and Wi-Fi6E, which was commercialised in devices in 2021, adds a large block of new spectrum that will deliver on the promise of gigabit fixed access. It is unlikely that 5G will have any major performance advantages over Wi-Fi for general private and public usage, and therefore any shift to mobile usage will be slow and held back by there being no clear financial incentives for users.

We expect that the Wi-Fi share of handset traffic will stay above 50% until the end of the forecast period. Overall, the ratio of Wi-Fi to cellular traffic will reach its lowest point in 2023 (at 4.7 ×) and then start to rise again, largely driven by increased home usage in emerging markets.

## About the authors



**Rupert Wood** (Research Director) is the lead analyst for our *Fibre Infrastructure Strategies* and *Wireless Infrastructure Strategies* research programmes. His research covers the following areas: the evolution of operators' investment priorities; operator business structures; business models for FTTP and convergence; fixed broadband technologies; the economic impact of digital transformation; capex forecasting; and network traffic forecasting. He has extensive experience of advising senior management on strategic issues. Rupert has a PhD from the University of Cambridge, where he was a Lecturer before joining Analysys Mason.



**Stefano Porto Bonacci** (Senior Analyst) is a member of the *Regional Markets* research practice, and contributes mainly to the *Asia-Pacific* and *Global Telecoms Data* research programmes. He focuses on market sizing, market forecasting and analysing operators' strategies. Prior to joining Analysys Mason, he gained experience as an economic analyst in the telecoms and financial sectors of the European Commission and at an economic policy think-tank. He holds an MSc in economics from Bocconi University.

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# Our areas of expertise



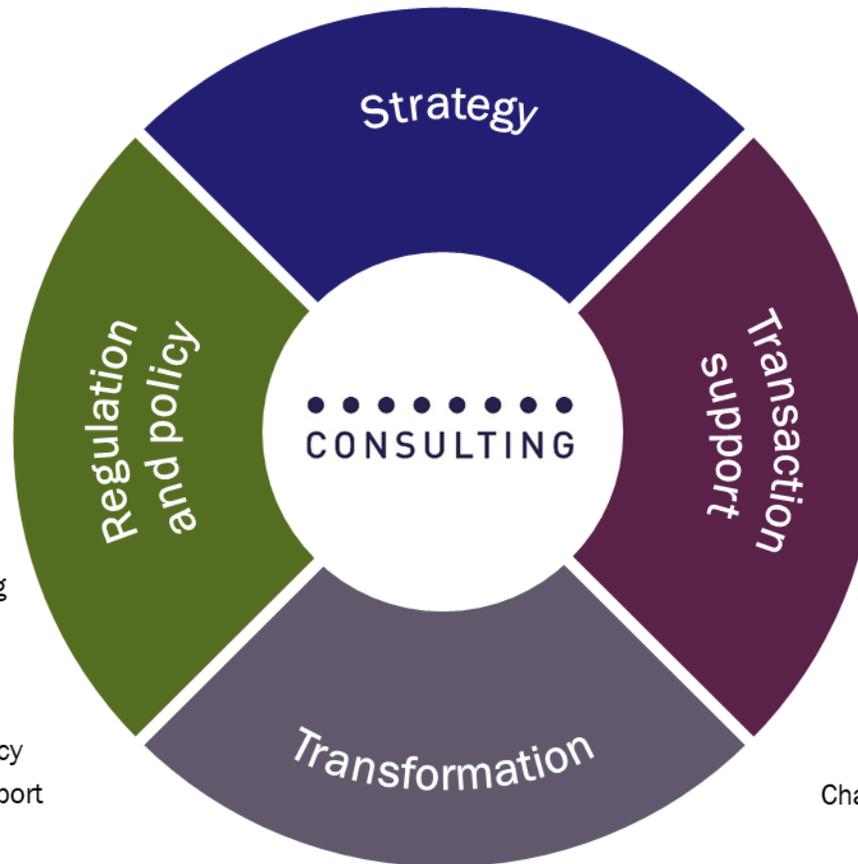
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